

**THE CHINESE UNIVERSITY OF HONG KONG**  
**Department of Mathematics**

**MATH2230 Complex Variables with Applications, Second term 2023-24**

**Assessment Scheme**

- **Homework** 10%:  
 Assignments will be posted on the course webpage every week. Please use the *Blackboard* system to submit your homework assignments.
- **Midterm** 40%:  
 There will be two midterms on *February 27* and *April 2*.
- **Final Exam**: 50%  
 The date is TBA by the university

**Schedule**

Wk	Tuesday	Wednesday	Contents
1	Jan 9	Jan 10	Complex numbers: algebra and geometry
2	Jan 16	Jan 17	Functions and mappings
3	Jan 23	Jan 24	Differentiation, Cauchy-Riemann Equations
4	Jan 30	Jan 31	Line integrals, Cauchy-Goursat Theorem
5	Feb 6	Feb 7	Cauchy integral formula
6	Feb 13 (Holiday)	Feb 14 (Holiday)	
7	Feb 20	Feb 21	Liouville's theorem, Maximal principle
8	Feb 27 (no class)	Feb 28	<b>Test 1 (7:00-8:00pm @ LSB LT1)</b>
9	Mar 5 (no class)	Mar 6 (no class)	
10	Mar 12	Mar 13	Taylor and Laurent series
11	Mar 19	Mar 20	Singularities
12	Mar 26	Mar 27	Residue theorem
13	Apr 2 (no class)	Apr 3	<b>Test 2 (7:00-8:00pm @ LSB LT1)</b>
14	Apr 9	Apr 10	Computing improper and definite integrals
15	Apr 16	Apr 17	Argument principle

**Pre-requisite:** Basic knowledge of *limit, power series, partial derivative, vector field, line integral, Green's theorem*

**Remark:**

1. Mathematical rigor of MATH2230 is NOT at MATH2050 level – we will *skip* some technical details if they get in the way of understanding; however, we will *note* what was left out.
2. The speed of class is *slow* at the beginning (*Don't be fooled!*), but things build up *continuously* and new things appear *often*. Good news is that nothing is really hard.